

We claim:

1. An optical arrangement, comprising:
  - a light source that emits radiation,
  - a mount,
  - an optical element fastened in said mount,
  - wherein said optical element is acted on by said radiation such that a heat supply results from said radiation that lacks symmetry corresponding to the shape of said optical element, and
  - a connecting structure between said optical element and said mount, having a symmetry characteristic that does not correspond to the shape of the optical element.
2. An optical arrangement, comprising:
  - a light source that emits radiation,
  - a mount,
  - an optical element fastened in said mount,
  - wherein said optical element is acted on by said radiation such that heat that results from said radiation lacks symmetry corresponding to the shape of said optical element, and
  - a single- or multi-part thermally conducting element arranged in operative connection with said optical element and said mount and

having a form of heat transport that effects an at least partial compensation of the asymmetry of temperature distribution in said optical element.

3. A projection exposure system for microlithography, comprising:  
an optical element that is heated by radiation in a manner that lacks rotational symmetry, and  
a cooling system for said optical element that lacks rotational symmetry, said cooling system including passive thermally conducting devices that effect cooling.
4. A projection exposure system for microlithography, comprising  
an optical element that is heated by radiation in a manner that lacks rotational symmetry, and  
at least one passively thermally conducting part arranged in thermal contact with said optical element, which part covers a portion of the cross section of said optical element which is not exposed to said radiation, and which part reduces temperature gradients in said optical element.
5. The optical arrangement according to claim 1, in which said optical element comprises a transmitting element.
6. The optical arrangement according to claim 5, in which said

transmitting element comprises a lens.

7. The optical arrangement according to claim 2, in which said optical element comprises a transmitting element.
8. The optical arrangement according to claim 7, in which said transmitting element comprises a lens.
9. The projection exposure system according to claim 3, in which said optical element comprises a transmitting element.
10. The projection exposure system according to claim 9, in which said transmitting element comprises a lens.
11. The projection exposure system according to claim 4, in which said optical element comprises a transmitting element.
12. The projection exposure system according to claim 11, in which said transmitting element comprises a lens.
13. The optical arrangement according to claim 1, in which said optical element comprises a mirror.
14. The optical arrangement according to claim 2, in which said optical element comprises a mirror.
15. The projection exposure system according to claim 3, in which said optical element comprises a mirror.
16. The projection exposure system according to claim 4, in which said

optical element comprises a mirror.

17. The optical arrangement according to claim 1, having a slit-shaped image field.
18. The optical arrangement according to claim 2, having a slit-shaped image field.
19. The projection exposure system according to claim 3, having a slit-shaped image field.
20. The projection exposure system according to claim 4, having a slit-shaped image field.
21. The optical arrangement according to claim 5, in which said optical element is arranged near a field plane.
22. The optical arrangement according to claim 7, in which said optical element is arranged near a field plane.
23. The projection exposure system according to claim 9, in which said optical element is arranged near a field plane.
24. The projection exposure system according to claim 11, in which said optical element is arranged near a field plane.
25. The optical arrangement according to claim 1, further comprising a reticle, the illumination of which lacks rotational symmetry.
26. The optical arrangement according to claim 25, in which said reticle

illumination consists of off-axis, dipole or quadrupole illumination type.

27. The optical arrangement according to claim 2, further comprising a reticle, the illumination of which lacks rotational symmetry.
28. The optical arrangement according to claim 27, in which said reticle illumination consists of off-axis, dipole or quadrupole illumination type.
29. The projection exposure system according claim 3, further comprising a reticle, the illumination of which lacks rotational symmetry.
30. The projection exposure system according to claim 29, in which said reticle illumination consists of off-axis, dipole or quadrupole illumination type.
31. The projection exposure system according to claim 29, in which said optical element is arranged near a pupil plane.
32. The projection exposure system according to claim 4, further comprising a reticle, the illumination of which lacks rotational symmetry.
33. The projection exposure system according to claim 32, in which said reticle illumination consists of off-axis, dipole or quadrupole illumination type.

34. The projection exposure system according to claim 32, in which said optical element is arranged near a pupil plane.
35. The optical arrangement according to claim 1, in which said connecting structure comprises portions of different materials.
36. An optical arrangement comprising:  
a light source that emits radiation,  
a mount,  
an optical element fastened to said mount,  
wherein said optical element is acted on by said radiation such that heat that results from said radiation lacks symmetry corresponding to the shape of said optical element, and  
a single- or multi-part passive thermally conducting element arranged in operative connection with said optical element and said mount and having a form of heat transport that effects an at least partial compensation of the asymmetry of temperature distribution in said optical element,  
wherein said passive thermally conducting element comprises an assembly of portions of different material.
37. A projection exposure system for microlithography, comprising:  
an optical element that is heated by radiation in a manner that lacks

rotational symmetry, and

a cooling system for said optical element that lacks rotational

symmetry, said cooling system including passive thermally

conducting devices that effect cooling,

wherein said passive thermally conducting devices comprise portions

of different material.

38. The projection exposure system according to claim 4, in which said at least one part of a thermal conductor in thermal contact with said optical element comprises a plurality of different materials.
39. The optical arrangement according to claim 1, in which said connecting structure comprises adjustable portions.
40. The optical arrangement according to claim 2, in which said thermally conducting element is adjustable.
41. The projection exposure system according to claim 3, in which said thermally conducting elements comprise adjustable portions.
42. The projection exposure system according to claim 4, in which said at least one part of a thermal conductor in thermal contact with said optical element is at least partially adjustable.
43. An optical arrangement, comprising:  
a light source,

at least one optical element, and  
a passive compensator of thermal effects caused by radiation from  
said light source, which compensator lacks rotational symmetry.

44. A projection exposure system for microlithography, comprising:  
an optical element that is heated by radiation in a manner that lacks  
rotational symmetry, and  
a cooling system that lacks rotational symmetry for said optical  
element, said cooling system comprising passive thermally  
conducting devices.